Paediatrica Indonesiana

VOLUME 43 July - August • 2003 NUMBER 7-8

Case Report

Nonspecific symptoms of intussusception

Bob Wahyudin, MD; Nassir Abbas, MD; Setia Budi, MD; Azis Tanra, MD

Intussusception occurs when a proximal portion of digestive tract is telescoped into the distal bowel segment. Intussusceptum is the bowel portion that invaginated, whereas intussusipiens is the portion that contained intussusceptum. Intussusception is the most common cause of intestinal obstruction between 3 months – 6 years of age. It is rare in children younger than 3 months and decreases in frequency after 36 months, most often between 5–9 months.[1-3]

Intussusception nomenclature is based on the relationship between intussusceptum and intussusipiens. For example, ileocolic intussusception means that the ileum is the intussusceptum and the colon is the intussusipiens. Ileocolocolic type occurs when the ileum is telescoped into the proximal colon, and then come together into the distal colon.

The specific symptoms include paroxysmal colicky pain in a previously well child, vomiting, passage of stool containing blood and mucus per anum, and a palpable ill-defined, sausage-shaped tumor mass in the right upper abdomen. Frequently, the symptoms are not specific and may mislead the diagnosis.[1,4,5]

This paper reports 2 cases of intussusception with nonspecific symptoms.

Report of the Case

Case I

A 7-year-old girl was admitted to the hospital on October 19, 1998. She complained of having a colicky abdominal pain for 3 days especially around the umbilical area and vomiting. No stool passed during the last 3 days. Micturition decreased within the last six hours.

Physical examination revealed a severely ill, well-nourished child with a body weight of 16.5 kg and a height of 112 cm. Respiratory rate was 42 per minute. Pulse rate was 140 per minute, regular and weak. Rectal temperature was 37.4^{o}C. Signs of severe dehydration were noted (dehydration score was 13). The heart and lungs were normal. Abdominal examination revealed an increased peristalsis, with a palpable ill-defined, tender tumor mass in the upper left abdomen, sized 8 x 5 cm. Others were unremarkable.

Blood examination documented normal routine blood data. Hb was 12.7 g/dl and leukocyte was 6000/mm^3. Differential count for eosinophil, rod, segment, and lymphocyte were 2, 3, 60, and 35 percent, respectively. Neither blood nor mucus was present on stool examination. The working diagnoses were dehydration and abdominal tumor. An 8-hour infusion of lactated Ringer's solution was given to overcome the dehydration.

From the Department of Child Health, Medical School, Hasanuddin University, Wahidin Sudirohusodo Hospital, Makassar, Indonesia.

Reprint requests to: Bob Wahyudin, MD, Department of Child Health, Medical School, Hasanuddin Hospital, Makassar, Indonesia. Tel. 62-411-510676, Fax. 62-411-510088.

Figure 1. Plain X – ray could not identify any tumor mass

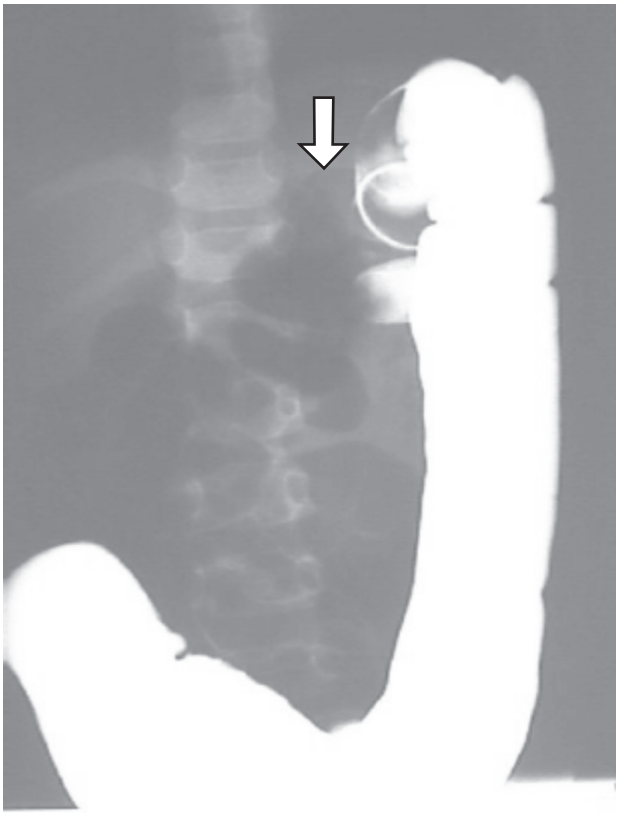

Figure 2. Barium fills the rectum up through the splenic flexure. The colon is dilated. Note the cupping appearance (arrow)

Clinical course

On the 2nd day of hospitalization, the patient had a good general condition with normal vital signs. No more signs of severe dehydration. Vomiting, abdominal pain, and the tumor mass were still present. Regular meals and vitamin were given. Plain abdominal x-ray was performed, but could not identify any tumor mass (**Figure 1**).

On the 3rd day, rectal examination revealed no abnormalities. Barium enema showed barium contrast entered and filled the rectum, sigmoid, ascending colon and stopped at splenic flexure. The colon was dilated and cupping appearance was seen at splenic flexure, giving a suggestion of intussusception at splenic flexure (**Figure 2**). Barium reposition failed to reduce the intussusception and she was referred to surgery department.

On the 4th day, she was treated conventionally with a diagnosis of obstructive ileus and differentially diagnosed as having intussusception or ascaris bolus. The general condition was good and the vital signs were normal, but the child still complained of having abdominal pain. Oral intake was stopped. She was treated with IVFD 5% dextrose and oxygen was given.

On the 5th day, laparotomy was performed. Ileocolocolic intussusception was found with the tip of the intussusceptum reached the proximal of descending colon. Reposition was performed using milking technique. After liberating the invaginated bowel segment, a mobile caecum and hypertrophic mesocaecal lymph node were found. The terminal ileum and the caecum were fixed to mesocolon and abdominal wall. Post operatively, she was treated with Ampicillin 3 x 1 g, Metampiron 2 x 1 g, Tranexamic acid 2 x 250 g, and Cimetidine 2x200 g.

On the 7th day, the general condition was good and the vital signs were normal. No vomiting, but the stool had not passed yet. The peristalsis was normal. She was treated with Amoxicillin and vitamin C orally.

On the 14th day, the general condition was good and the vital signs were normal. She was discharged

Figure 3. Plain abdominal x-ray shows no obvious abnormality

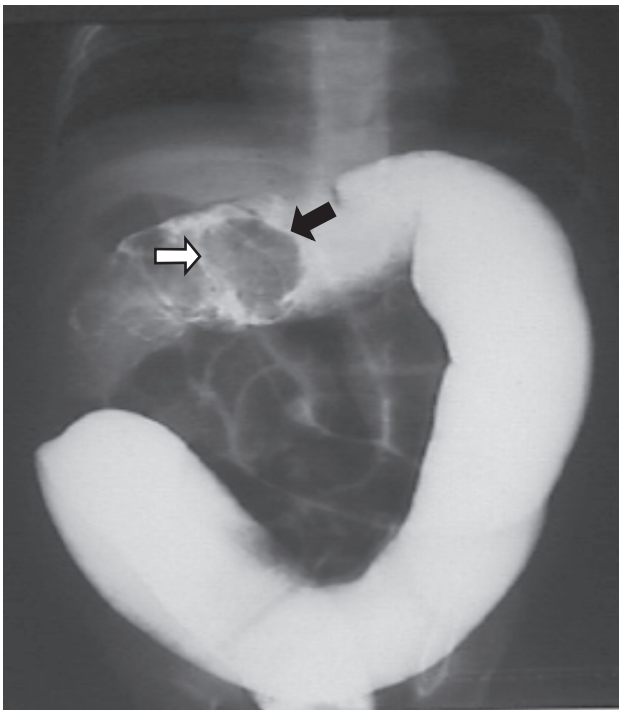

Figure 4. Cupping (black arrow) and coiled spring appearance (white arrow) at hepatic flexure

and treated as an outpatient in the Department of Pediatric Surgery.

Case 2

A six-month-old girl was admitted to the hospital on April 19, 1999. She passed stool containing blood and mucus 1 hour before admission but had no vomiting. She had intermitten fever for a week. Micturition was normal. There was a history of having diarrhea a week prior to admission, and antidiarrheal medication was given by a physician at a primary health center.

Physical examination revealed a moderately ill, undernourished child with a body weight of 7 kg and a height of 68 cm. Respiratory rate was 44 per minute, regular, pulse rate was 130 per minute, rectal temperature was 38.9^{o}C. Heart and lungs were normal. Abdominal examination revealed a normal peristalsis without palpable tumor. Others were unremarkable. Rectal examination revealed blood and mucus on the examiner's fingertip.

Blood examinations were as follows: Hb 10.2 g/dl; leukocyte 14,960/mm^3; platelets 214,000/mm^3; differential count for rod, segment, lymphocyte, and monocyte were 2,77,15, and 6 percent, respectively. Erythrocytes and leukocytes > 10/HPF were found on stool examination.

Plain abdominal x-ray showed no obvious abnormality (**Figure 3**).

The working diagnosis was bacillary dysentery, which differentially diagnosed as intussusception. She was treated with cotrimoxazole, breast-feeding, and soft food.

Clinical course

On the 2nd day of hospitalization, the general condition was weak. She vomited 4 times. Paroxysmal colicky pain recurred in approximately 15-minute intervals accompanied by loud cries. Stool containing blood and mucus was passed. Abdominal examination revealed a tender ill-defined sausage-shaped mass in the right upper abdomen. Plain abdominal x-ray showed air-fluid level with a stepladder appearance, the gut was dilated, no signs of peritonitis, indicating an obstructive ileus. A diagnosis of intussusception was suspected and she was then referred to the Department of Surgery.

On the 3rd day, barium enema showed cupping and coiled spring appearance at the hepatic flexure (**Figure 4**). Barium as well as pneumatic reposition failed to reduce the intussusception. Therefore, a laparotomy was performed and revealed an ileocolocolic intussusception down through the sigmoid colon. The intussusception was reduced by milking-technique. Post operatively, Ampicillin and Gentamycin were given intravenously and oral intake was stopped.

On the 5th day, the general condition was good and the vital signs were normal. Her peristalsis as well as her micturition and bowel movement were normal. The antibiotics were continued orally and she was given soft food.

On the 6th day, she was discharged in good general condition and treated as an outpatient in pediatric surgery department.

Discussion

The typical clinical manifestations of intussusception consist of severe paroxysmal colicky pain, frequent vomiting, passage of stool containing blood and mucus, and tumor mass in the right upper abdomen. Blood generally is passed within the first 12 hours but sometimes this typical symptom does not occur in the initial stage of the disease. [1,4]

In the first case, vomiting caused dehydration. The abdominal mass could not be identified on plain abdominal x-ray. There was no passage of blood and mucus per anum although the intussusception had developed for 3 days prior to hospitalization. This type of case, by Janik, is termed "nonischemic intussusception", which is more difficult to diagnose, and usually the patient has undergone a prolonged hospitalization before the diagnosis is established using barium enema,[6] as in the first case. The first patient was discharged on the 14th day of hospitalization after surgical reposition was made.

In the second case, diarrhea was the initial symptom followed by passage of stool containing blood and mucus one week later. The bloody diarrhea then directed the working diagnosis as bacillary dysentery which mostly caused by *Shigella sp*. Bloody diarrhea at 6 months of age does not exclude the possibility of intussusception, which is the most common cause of intestinal obstruction between 3 months and 6 years of age, especially when solid food is suspected as the etiology of the intussusception. As a comparison, the peak incidence of bacillary dysentery is between the ages of 6 months and 3 years. [4]

Barium as well as pneumatic reposition failed to reduce the intussusception in both patients. Increasing pressure during barium reduction may lead to bowel perforation, which will produce intractable peritonitis. For this reason, pneumatic reduction was performed. Although it might also produce perforation, the negative effect would have been milder.[7,8] The second patient was discharged on the 6th day of hospitalization after surgical reposition was performed.

References

1. Wyllie R. Ileus, adhesions, intussusception and closed loop obstruction. In: Behrman RE, Kliegman RM, Arvin AM, editors. Nelson textbook of pediatrics; 15th ed. Philadelphia: WB Saunders Co; 1996. p. 1072-4.
2. Hamami AH, Pieter J, Riwanto I, Tjambolang T. Usus halus, apendiks, kolon dan anorektum. In: Jong WD, Sjamsuhidajat R, editors. Buku ajar ilmu bedah. Jakarta: EGC; 1997. p. 846-50.
3. Husain M, Mantu FN. Invaginasi pada anak dan bayi. Cermin Dunia Kedokteran 1993; 86:56-7.
4. Roy CC, Silverman A, Cozzetto FJ. Pediatric clinical gastroenterology; 2nd ed. Saint Louis: CV Mosby Co; 1975. p. 105-9.
5. Del-Pozo G, Albillos JC, Tejedor D. Intussusception in children: current concepts in diagnosis and enema reduction. Radiographics 1999; 19:299-319.
6. Raffensperger JG. Swenson's pediatric surgery. 5th ed. Norwalk: Appleton & Lange; 1990. p. 221-8.
7. Gorenstein A, Raucher A, Serour F, Witsling M, Katz R. Intussusception in children: reduction with repeated, delayed air enema. Radiology 1998; 206:721-4.
8. Shiels WE, Maves CK, Hedlund GL, Kirks DR. Air enema for diagnosis and reduction of intussusception: clinical experience and pressure correlates. Radiology 1991; 181:169-72.